

What They Do

Manufacturing Engineers work to make the most efficient manufacturing design possible. They may work to help develop, test, and evaluate integrated systems for managing small, medium or large industrial production facilities. They must concern themselves with a number of elements of the engineering equation, including the work environment, quality and inventory control, logistics and material flow, cost analysis, production coordination, and sometimes the development of equipment and tooling.

Manufacturing Engineers work with other engineering staff members to make sure everything is in place when a new product is made. They find out how much time is used by manufacturing personnel in doing each step of production. They may also help develop cost estimates for new and existing products. Their job requires keeping detailed records of their activities, as well as entering them into a computer database in order to devise reports.

*Manufacturing Engineers in the biotech industry share characteristics of Industrial Engineers. Detailed descriptions of this occupation may be found in the Occupational Information Network (O*NET) at online.onetcenter.org.*

Important skills, knowledge, and abilities include:

- ▶ Production Processing – Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- ▶ Engineering and Technology – Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- ▶ Design – Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
- ▶ Mathematics – Using mathematics to solve problems.
- ▶ Reading Comprehension – Understanding written sentences and paragraphs in work related documents.
- ▶ Oral Expression – The ability to communicate information and ideas in speaking so others will understand.
- ▶ Management of Material Resources – Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.

Training/Requirements

- ▶ Bachelor's degree in a science-related field, or an engineering bachelor's with knowledge of science.
- ▶ Up to two years experience in research product development or in manufacturing.

Manufacturing Engineers

What's the California Job Outlook?

While the Bureau of Labor Statistics does not collect data on Manufacturing Engineers, the occupation listed below is found in the biotechnology industry and has similar duties. The California outlook and wages figures are drawn from all industries and represent an occupation comparable to Manufacturing Engineers.

Standard Occupational Classification	Estimated Number of Workers 2002	Estimated Number of Workers 2012	Average Annual Openings	2005 Wage Range (per hour)
Industrial Engineers				
17-2112	18,600	20,800	670	\$30.00 to \$44.98

These figures do not include self-employment.

Average annual openings include new jobs plus openings due to separations.

Source: www.labormarketinfo.edd.ca.gov, Employment Projections by Occupation and OES Employment & Wages by Occupation, Labor Market Information Division, Employment Development Department.

Additional Sources of Information

California Department of Consumer Affairs
State Board of Registration for Professional Engineers
(800) 952-5210
www.dca.ca.gov

Institute of Industrial Engineers
(800) 494-0460
www.iienet.org

Occupational Information Network (O*NET)
<http://online.onetcenter.org>